REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-20 are presently pending in this application.

In the outstanding Office Action, the amendment filed November 24, 2008 was objected to under 35 U.S.C. 132(a) because it introduced new matter into the disclosure; and Claims 1-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pitcher, Jr. (U.S. Patent 4,417,908) in view of EP 1 184 066 (hereinafter "EP '066).

First, Applicants acknowledge with appreciation the courtesy of a personal interview granted to Applicants' representative on December 8, 2009. During the interview, the outstanding issues were discussed in light of the pending claims and Applicants' specification. The discussions held during the interview are reiterated and supplemented below.

Regarding the objection under 35 U.S.C. 132(a), it is respectfully submitted that Figures 1 and 2 attached to the response filed November 24, 2008 are prepared as extrapolations of data points found in Table on page 39 of the specification. Specifically, Figure 1 shows the "average pore diameter" on the x-axis and the "loss upon collecting particulates" for "6 g/l" on the y-axis as found in the Table. The values of the "loss upon collecting particulates" are plotted at 5μm, 10μm, 20μm and 30μm as they are found in Examples 1, 4, 7 and 10 in the Table. Also, Figure 2 shows the "pore diameter distribution" (referred as "rate of large pore (%)" in Figure 2) on the x-axis and the "loss upon collecting particulates" for "6 g/l" on the y-axis as found in the Table. The values of the "loss upon collecting particulates" are plotted at 10%, 20% and 30% as they are found in Examples 4, 5 and 6 in the Table. As stated in the previous response, these graphs were provided simply as exhibits for the purposes of illustrating the data on Tables on page 39, 43, 47 and 51 of the

specification along with the discussions, *not as new drawings as a part of the disclosure.* Therefore, Applicants respectfully request that the objection be withdrawn.

Briefly recapitulating, Claim 1 is directed to a columnar honeycomb structural body and recites "a porous ceramic block having a plurality of through holes extending in parallel with one another in a length direction of the porous ceramic block, the porous ceramic block having a wall portion interposed between the through holes, wherein the through holes have one of ends sealed such that an opening area of one end face of the through holes is larger than an opening area of the other end face of the through holes, the plurality of through holes includes a plurality of large through holes and a plurality of small through holes, the large through holes have cross-section areas which are larger than cross-section areas of the small through holes, the large through holes and the small through holes are positioned such that a distance between centers of gravity of the cross-section areas of adjacent ones of the large through holes is set to be equal to a distance between centers of gravity of the cross-section areas of adjacent ones of the small through holes, the opening area of one end face of the through holes and the opening area of the other end face of the through holes have a ratio in a range between 1.01 to 6, the wall portion has a plurality of micro pores having an average pore diameter in a range from 5 to 30 μm, the micro pores include large micro pores having a pore diameter two or more times larger than the average pore diameter, and the large micro pores have a capacity of which a rate is set to 30% or less of a capacity of the micro pores in entirety."

By providing a wall portion having such micro pores (*i.e.*, 5 μm or larger ***but no larger than 30 μm***, and large micro pores having a pore diameter two or more times larger than the average pore diameter are 30% or less in their capacity with respect to the entire capacity of the micro pores) in a porous ceramic block, particulates are not rigidly trapped

within the wall portion and can be more easily removed from the surface of the wall portion, thereby preventing heavy accumulation of the particulates on and inside the surface of the wall portion and *suppressing a sudden rise in pressure loss over a period of time.* For example, Figures 1 and 2 show the pressure losses upon collecting 6g/l of particulates are significantly low for the wall portion when its micro pores are 5 μm or larger ***but no larger than 30 μm*** in accordance with the claimed structural features.

EP '066 directs a porosity of 40% or more, an average pore diameter of 3 to 7 μm and a volume of pores having diameters of 10 μm or more, or 20% or less relative to the total pore volume[1] and ***to suppress an increase in pressure loss,*** it directs to *the thickness of the partition walls functioning as a filtration layer are set at 250 μm or less.*[2] EP '066 not only describes a honeycomb structure in which the opening areas on the inlet and outlet sides are set equal and thus only weak force is exerted on the particles passing through the partition wall, but also it sets different structural criteria, the pore size and distribution only in dealing with the trapping efficiency and the partition wall thickness in dealing with the pressure loss. Thus, the descriptions on the structural dimensions and distribution of the micro pores in EP '066 are not believed to lead to the improvement in the pressure loss.

Pitcher, Jr. simply shows various structures in which the opening areas on the inlet and outlet sides are sealed differently, and nowhere does Pitcher, Jr. describe or suggest a ceramic structure having certain micro pores. Nor does Pitcher, Jr. teach or suggest preventing heavy accumulation of the particulates on and inside the surface of the wall portion and suppressing a sudden rise in pressure loss over a period of time. In addition, Pitcher, Jr. states that the thin wall has a lower limit of wall thickness which is 0010 inch

[1] See EP '066, paragraph [0013].
[2] See EP '066, paragraph [0014].

(*i.e.*, over 250 μm)[3], whereas it is important in EP '066 that the partition walls be set to 250 μm or less[4], leading away from combining these two structures.

As such, it is respectfully submitted that neither EP '066 nor Pitcher, Jr. teaches or suggest "a porous ceramic block having ... through holes [and] a wall portion interposed between the through holes, wherein the through holes have one of ends sealed such that an opening area of one end face of the through holes is larger than an opening area of the other end face of the through holes, the wall portion has a plurality of micro pores having *an average pore diameter in a range from 5 to 30 μm, the micro pores include large micro pores having a pore diameter two or more times larger than the average pore diameter, and the large micro pores have a capacity of which a rate is set to 30% or less of a capacity of the micro pores in entirety*" as recited in Claim 1 (emphasis added in italic).

Furthermore, by forming through holes as recited in Claim 1 (see attached Exhibit 1 for illustration, for example), the ceramic block disperses heat more uniformly throughout its structure during the regeneration process, thereby preventing heat being localized in a certain portion of the ceramic block and reducing thermal stress. As a result, the columnar honeycomb structural body exhibits superior durability free from cracks caused by thermal stress even after long term repetitive use.

It is respectfully submitted that neither Pitcher, Jr. nor EP '066 teaches or suggests "a porous ceramic block having a plurality of through holes extending in parallel with one another in a length direction of the porous ceramic block ..., wherein the through holes have one of ends sealed such that an opening area of one end face of the through holes is larger than an opening area of the other end face of the through holes, the plurality of through holes includes a plurality of large through holes and a plurality of small through holes, the large

[3] See, Pitcher, Jr., column 4, lines 29-37.
[4] See, EP '066, page 3, paragraph 014.

through holes have cross-section areas which are larger than cross-section areas of the small through holes, the large through holes and the small through holes are positioned such that a distance between centers of gravity of the cross-section areas of adjacent ones of the large through holes is set to be equal to a distance between centers of gravity of the cross-section areas of adjacent ones of the small through holes, the opening area of one end face of the through holes and the opening area of the other end face of the through holes have a ratio in a range between 1.01 to 6 ..." as recited in Claim 1.

EP '066 does not disclose through holes comprised of large through holes and small through holes. Also, according to EP '066, the opening areas on the inlet and outlet sides are set equal because it sets the same number of through holes (*i.e.*, cells) being sealed at two opposite ends, and thus only weak force is exerted on the particles passing through the partition wall.

Except for Figures 6, 16 and 17, the structures shown in Pitcher, Jr. do not have through holes comprised of large through holes and small through holes. But in the structures in Figures 6 and 16, the distance between the centers of gravity of the cross-section areas of adjacent large through holes is different from the distance between the centers of gravity of the cross-section areas of adjacent small through holes, and in the structure shown in Figure 17, it is believed that the ratio of the opening areas of the two end faces of the through holes clearly exceeds 6. Therefore, the structure recited in Claim 1 is believed to be clearly distinguishable from Pitcher, Jr.

Based on the foregoing discussions, both EP '066 and Pitcher, Jr. fail to disclose the through hole structures as recited in amended Claim 1, and even their combined teachings are not believed to render the honeycomb structural body recited in Claim 1 obvious.

For the foregoing reasons, Claim 1 is believed to be allowable. Furthermore, since Claims 2-20 depend directly or indirectly from Claim 1, substantially the same arguments set

forth above also apply to these dependent claims. Hence, Claims 2-20 are believed to be allowable as well.

In view of the discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

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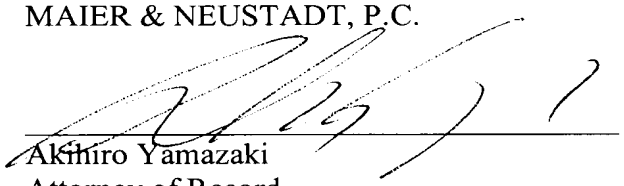

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